2005 Annual Drinking Water Quality Report

Town of Berryville, Virginia

INTRODUCTION

This Annual Drinking Water Report for calendar year 2005 is designed to provide you with valuable information about your drinking water quality. The Town of Berryville is committed to providing you with a safe and dependable supply of drinking water, and we want you to understand the steps we take to protect your water supply. The quality of your drinking water meets all state and federal requirements administered by the Virginia Department of Health (VDH), Office of Drinking Water.

If you have questions about this report, want additional information about any aspect of your drinking water, or want to know how to participate in decisions that may effect the quality of your drinking water, please contact:

Mr. David Tyrrell, Director of Utilities at (540) 955-1759.

You can obtain additional information by attending Town Council meetings held at 7:30 p.m. the second Tuesday of each month in the Town Council Chambers. Also, the Town's quarterly newsletter covers water related issues.

GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or human activity. Substances in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural or farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have had any treatment.

All drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some constituents. The presence of these substances does not necessarily indicate that the water poses a health risk. To ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain substances in water provided by public water systems like the Towns'.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791.)

SOURCE AND TREATMENT OF YOUR DRINKING WATER

Your drinking water is surface water obtained from the Shenandoah River. Water is distributed throughout the town by pumps at the water treatment plant, one booster pump station, one ground storage reservoir, and two elevated storage tanks.

Treatment includes pre-sedimentation, the addition of liquid alum and a polymer for coagulation, the addition of carbon for absorption, the addition of potassium permanganate as a pre-oxidant, and the addition of chlorine to disinfect the finished water. Sodium fluoride is also added to help prevent dental caries. The water is mixed with the coagulant, allowed to settle, and is filtered through two sand filters. The Virginia Department of Health has established a design capacity of 864,000 gallons per day for the Town of Berryville waterworks. Our current water usage is approximately 412,000 gallons per day.

John Kizer
resident of
Berryville

SOURCE WATER ASSESSMENTS

A source water assessment for the Town of Berryville was completed by the Virginia Department of Health on April 12, 2002. This assessment determined that the Town's water source, the Shenandoah River, may be susceptible to contamination because it is surface water exposed to a wide array of contaminants at varying concentrations. Changing hydrologic, hydraulic, and atmospheric conditions promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained through the contact person referenced within this report.

QUALITY OF YOUR DRINKING WATER

Your drinking water is constantly monitored for various constituents in the water supply to insure that all regulatory requirements are met. The tables provided list only those constituents that had some level of detection. Many other constituents, including synthetic organic compounds, and volatile organic compounds, were sampled and analyzed for but were not present, or were below the detection limits of the laboratory equipment. All water samples were analyzed at the Berryville water treatment plant or the Division of Consolidated Laboratory Services in Richmond.

The water quality results listed in the tables provided are from testing done in 2005. However, the state does allow us to monitor for some constituents less than once per year because the concentrations do not change frequently. Some of our data though accurate, is more than one year old.

DEFINITIONS

In the tables and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

Non-detects (ND) - lab analysis indicates that the contaminant is not present.

Parts per million (ppm) or Milligrams per liter (mg/1) - one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter – one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.

Picocuries per liter (pCi/l) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level, or MCL – the highest level of a contaminant in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal, or MCLG – the level of a contaminant in drinking water below which there is no known expected risk to health. MCLGs allow for a margin of safety.

Variances and exemptions – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

WATER QUALITY RESULTS

Microbiological

Constituent	MCLG	MCL	Highest Single Level Found	Unit Measurement	Lowest Monthly % < 0.3 NTU	Violation	Date of Sample	Typical Source of Constituent
Turbidity	N/A	TT	1.05	NTU	98%	NO	12/05	Soil Runoff

Constituent: Total Organic Carbon

Constituent	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Constituent
Total Organic Carbon	N/A	TT	1.44 (avg) Range 1.0 – 1.71	Ratio of Actual to Required Removals	NO	Monthly	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects, but provides formation medium for disinfection by-products. These by-products include trihalomethane (TTHM) and haloacetic acids (HAA5).

Inorganic Constituents

Constituent	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Constituents
Nitrate	10	10	1.5	mg/1	NO	1/05	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion
Fluoride	4	4	0.66 (avg.) Range 0 – 1.30	mg/l	NO	Daily	Erosion of natural deposits; Discharge from fertilizer and aluminum factories; **Water additive which promotes strong teeth**

Radiological Constituents

Constituent	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Constituents
Alpha emitters	0	15	0.0	pCi/l	NO	3/02	Erosion of natural deposits
Beta emitters	0	50	2.4	pCi/l	NO	3/02	Erosion of natural deposits

Disinfection Byproduct Constituents

Constituent	MCLG	MCL	Level Found	Unit Measurement	Violation	Quater	Typical Source of Constituents
Total Trihalomethane	0	80		ppb			By-product of drinking water chlorination
Distribution System			36.8	ppb	NO	1st 2005	
Distribution System			35.9	ppb	NO	2nd 2005	
Distribution System			41.9	ppb	NO	3rd 2005	
Distribution System			44.4	ppb	NO	4th 2005	
Haloacetic Acid (HAA5)	0	60		ppb			By–product of drinking water chlorination
Distribution System			28.4	ppb	NO	1st 2005	
Distribution System			28.5	ppb	NO	2nd 2005	
Distribution System			30.4	ppb	NO	3rd 2005	
Distribution System			30.6	ppb	NO	4th 2005	

Lead and Copper

Constituent	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Sample > AL	Date of Sample	Typical Source of Constituents
Lead	0	AL=15	6.9	ppb	NO	0	9/05	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	1.3	AL=1.3	0.068	mg/l	NO	0	9/05	Corrosion of household plumbing systems; Erosion of natural deposits

Maximum Contaminant Levels (MCLs) are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards, EPA assumes that the average adult drinks two liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effect for some constituents or a one-in-ten thousand to one-in-a-million chance of having the described health effect for other constituents.

Other

Constituent	MCLG	MCL	Level Found	Unit Measurement	Date of Sample	Typical Source of Constituent
Sodium	None	None	6.82	mg/l	1/05	Erosion of natural deposits

No Coliform Bacteria Found

Three different system samples from twelve different locations throughout the distribution system were analyzed for fecal coliform and E. Coli bacteria each month. The results of these analyses indicated NO presence of either type of bacteria in any sample collected.

VIOLATION INFORMATION

The Town of Berryville waterworks was in full compliance with all water quality monitoring and reporting requirements and no violations occurred.

This Drinking Water Quality Report was prepared by: David A Tyrrell, Director of Utilities for the Town of Berryville. Please call Dave at (540) 955-1759 if you have any questions.

Town of Berryville
23 East Main Street
Berryville, Virginia 22611

PRESORTED
FIRST CLASS
MAIL
U.S. Postage Paid
Berryville, Virginia
Permit No. 31